

## ABSTRACT OF THE DISCLOSURE

An initial synchronization searching apparatus and method in a mobile communication system are disclosed. Correlation is not performed on an entire input signal but on a specific region of an input signal. Accordingly, complicated calculations required for the initial synchronization of the TD-SCDMA or the UMTS-TDD terminal can be considerably reduced. The initial synchronization searching method includes: accumulating input signals for several frames; taking an absolute value of the accumulated value; and searching a region with a high power distribution having a certain length from the absolute-taken signal, selecting it as a candidate region and searching for synchronization in the selected candidate region.